

This responds to the final office action, mailed July 20, 2007.

In the patent application, claims 3-7, 9-12, 14-18 and 20-25 are pending.

In the final office action, all pending claims are rejected.

At section 3, claims 3-7, 9-12, 14-18 and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Petre et al.* (U.S. Patent No. 7,158,558, hereafter referred to as *Petre*), in view of *Onggosanusi et al.* (U.S. Patent Application Publication No. 2002/0196842, hereafter referred to as *Onggosanusi*).

In rejecting claims 3, 6, 7, 9, 11, 12, 14, 17, 18, 20 and 22-25, the Examiner states that *Petre* discloses a method of communication using a common pilot channel (CPICH) in a W-CDMA receiver which receives the CPICH. The signal is equalized using chip level equalization and the equalized CPICH channel is despread. The Examiner admits that *Petre* fails to disclose estimating SINR from the despread CPICH, but points to *Onggosanusi* for disclosing that feature.

In rejecting claims 4 and 16, the Examiner states that the combination of the teachings in *Petre* and *Onggosanusi* discloses a virtual space-time decoding being used on the CPICH channel in order to mimic data channel space-time transformation.

In rejecting claims 5, 10 and 15, the Examiner states that the combination of the teachings in *Petre* and *Onggosanusi* discloses that received chips are oversampled at chip-level.

In rejecting claim 21, the Examiner states that the receiver is in a mobile terminal.

It is respectfully submitted that in the claimed invention, claim 3 has the limitation of despread a Common Pilot Channel in a spread-spectrum receiver, wherein the spread-spectrum receiver is adapted to receive a signal stream in space-time diversity transmission. Claim 6 has the limitation of an equalization stage for chip level filtering received chips, wherein the received chips are obtained from a signal stream in space-time transmit diversity transmission. Claim 11 has the limitation of a transmitter for transmitting a signal stream in space-time transmit diversity transmission to the receiver. Claim 17 has the limitation of a receiver, operatively connected to the antenna, for receiving communication signals in space-

time transmit diversity transmission. Claim 24 has the limitation of means for transmitting a signal stream to the receiver in space-time transmit diversity transmission.

Thus, the common feature among claims 3, 6, 11, 17 and 24 is the transmitted or received signal stream in a form for space-time transmit diversity transmission.

The Examiner states that *Onggosanusi* discloses estimating the signal-to-interference ratio (SINR) from the despread CPICH. The Examiner also states that *Onggosanusi* discloses that the transmitter comprises multiple antennas (Figure 3 and paragraph [0049]). The Examiner is silent on whether *Onggosanusi* discloses the signal stream is the form for space-time transmit diversity transmission.

While it is true that *Onggosanusi* discloses a communications system having a number of transmit antennas as shown in Figures 1 to 4, the multiple transmit antenna system is used in a multi-input multi-output (MIMO) system. (see paragraphs [0008], [0009], [0013], [0016], [0049], [0062]). In one of the embodiments, *Onggosanusi* uses four transmit antennas TAT''₁ to TAT''₄ and a larger number of receive antennas RAT''₁ to RAT''_Q ($Q > 4$) in a MIMO system with double space-time block coded transmit antenna diversity (DSTTD). In this DSTTD system, *Onggosanusi* uses two STTD encoders to combine information multiplexing with transmit diversity MIMO.

It is respectfully submitted that a signal transmitted in a DSTTD system is different from a signal stream in the space-time transmit diversity transmission, because a DSTTD system applies information multiplexing into two STTD blocks. For example, one of the STTD blocks transmits symbols $S_{1,1}$ and $S_{1,2}$ whereas the other STTD block transmits symbols $S_{2,1}$ and $S_{2,2}$ (see paragraph [0083]) The spatially parallel transmission causes additional interference. This interference would not be correctly taken into account by the claimed pilot processing for the space-time transmit diversity transmission scheme. Thus, the DSTTD scheme in *Onggosanusi* is not applicable for space-time transmit diversity transmission. Likewise, the claimed invention is not applicable for the DSTTD transmission.

Petre does not disclose that the signal stream is in the form for space-time transmit diversity transmission. *Onggosanusi* does not disclose that the signal stream is in the form for space-time transmit diversity transmission.

For the above reasons, *Petre*, in view of *Onggosanusi*, fails to render claims 3, 6, 11, 17 and 24 obvious.

As for claims 4, 5, 7, 9, 10, 10, 12, 14-16, 18, 20-23 and 25, they are dependent from claims 3, 6, 11, 17 and 24 and recite features not recited in claims 3, 6, 11, 17 and 24. For reasons regarding claims 3, 6, 11, 17 and 24 above, *Petre*, in view of *Onggosanusi*, also fails to render claims 4, 5, 7, 9, 10, 10, 12, 14-16, 18, 20-23 and 25, obvious.

CONCLUSION

Claims 3-7, 9-12, 14-18 and 20-25 are allowable. Early allowance of all pending claims is earnestly solicited.

Respectfully submitted,



Kenneth Q. Lao
Attorney for the Applicant
Registration No. 40,061

WARE, FRESSOLA, VAN DER SLUYS
& ADOLPHSON LLP
Bradford Green, Building Five
755 Main Street, P.O. Box 224
Monroe, CT 06468
Telephone: (203) 261-1234
Facsimile: (203) 261-5676
USPTO Customer No. 004955